E-Series Display
Operating Guide

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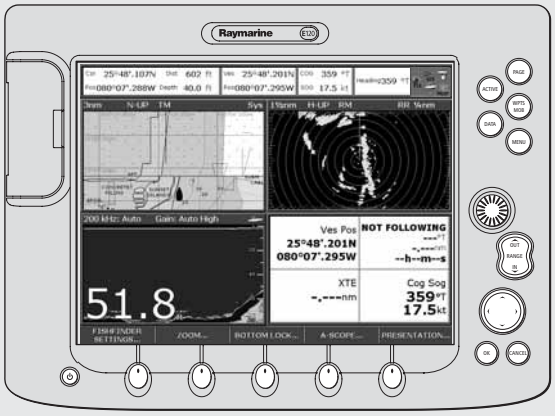

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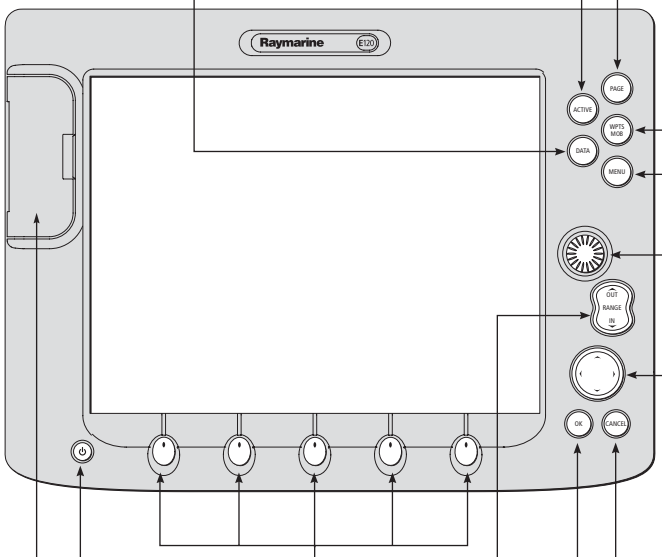
General Operation
The control panel
Card 1



DATA
Press to access ruler, chart vectors, archive & transfer and data bar on/off functions.

ACTIVE
When multiple windows are open:
- Press to select required window.
- Press and hold to maximize current window.
- Press again to return to multiple windows.

PAGE
Press to scroll through available pages.
Press and hold to select different page set or customise your own layout.

WPTS/MOB
Press to display the waypoint soft keys.
Press again to place waypoint at your boat's position.
Press and hold to place a **Man Overboard (MOB)** marker at your current position. Press and hold again to exit MOB.

MENU
Press to access the set up menus.

Rotary control
Use to edit alpha-numeric values, and scroll through lists.
Turn clockwise to increase value and counter-clockwise to decrease value.
Press to move the cursor to the next character when editing text.
Use to edit symbology (VRM/EBL etc).

Softkeys
Press to select the corresponding function identified by the on-screen label

Trackpad
Used to control the on-screen cursor and to scroll through menu items.
Press the corresponding edge of the trackpad to move the cursor horizontally, vertically or diagonally.
Press and hold to move rapidly over larger distances.

Power
Press once to turn ON.
Press again to access backlight functions and scanner controls.
Press and hold to turn the display OFF.

CANCEL
Press to cancel the selected on-screen option when editing data; also used to return to the previous soft key set or menu.

RANGE
Press to change the display scale so that a smaller or larger area can be seen on the screen.

OK
Press to select an on-screen option, or return to the previous set of soft keys or menu.

Chart Card slot
Open the cover to install CompactFlash cards.

WARNING: NAVIGATION AID
This unit is only an aid to navigation. Its accuracy can be affected by many factors, including equipment failure or defects, environmental conditions, and improper handling or use. It is the User's responsibility to exercise common prudence and navigational judgements. This unit should not be relied upon as a substitute for such prudence and judgement.
Always keep a proper look-out.

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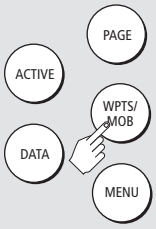
General Operation
Using the controls
Card 2

How do the controls work?

Buttons

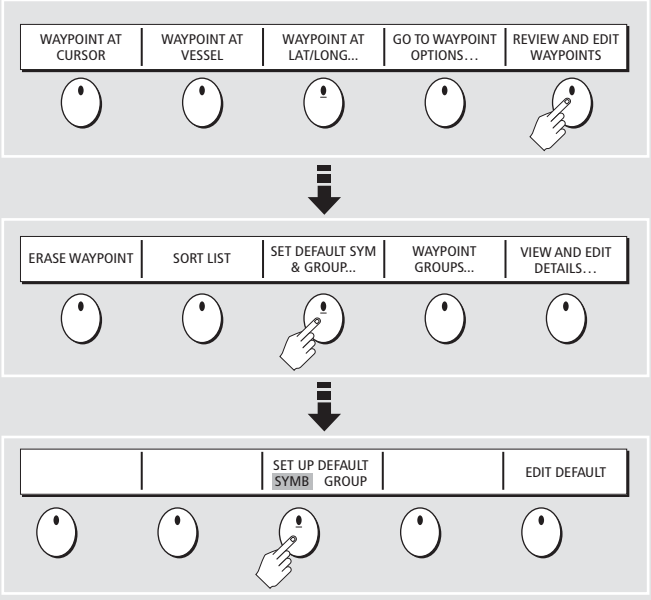
- Access system functions or change what you see on-screen. Within the text of this document they are written in bold capitals e.g. **WPTS/MOB.**
- Press and hold to access short cuts - see individual buttons on facing page.



Example:
This example shows the series of button and soft key presses required to change the waypoint default symbol or group.

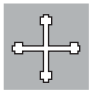
Soft keys

- They change depending on application or function being performed.
- Press and hold **MENU** to display help information for the currently displayed soft keys.
- Press the corresponding key (below the screen) to select.
- Further soft keys may be displayed. If a key has several options, each press will highlight the next option.
- If a key displays a single value or a slider above, use the rotary control to adjust.
- Within the text of this document they are written in capitals e.g. SORT LIST.



This process of pressing buttons and soft keys to navigate to the required function, is simplified within this guide and represented by a strip e.g.

The Cursor



The Cursor appears on the screen as a white cross.

To make it easier to locate on screen, the cursor changes to a circle with a cross in it, when it is moved after a 10 second period of inactivity.

The cursor is context-sensitive. When it is placed over an object e.g. a waypoint or chart feature, it changes color and a label or information associated with the object is displayed. When you place the cursor over certain items, the soft keys change to enable you to access related operations.

Simulator:

To practice using your Display without data from a GPS, scanner or fishfinder, switch on the simulator via the System Setup menu.

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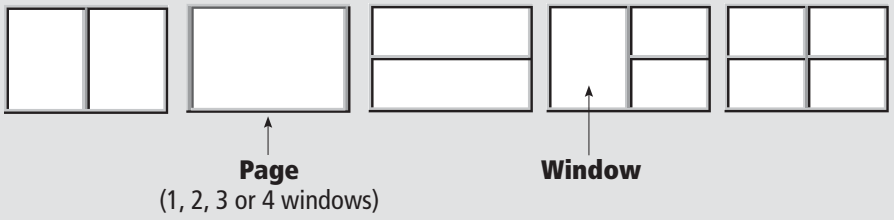
General Operation
Setting up the display

Card 3

How do I select how the applications are displayed?

The applications are shown using a combination of page sets, pages and windows. There are five page sets each containing five pages with a combination of windows and applications in each. These sets can be edited to define the combination that suits your particular needs.

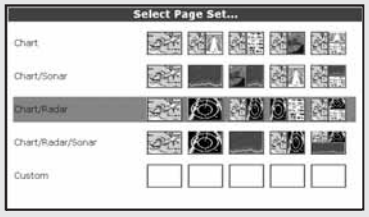
Any changes you make will be saved to the system. You can change these preferences as many times as you wish.



How do I select the Page Set?

PAGE

Press **and** hold



Highlight required page set.

To confirm... OK

Or

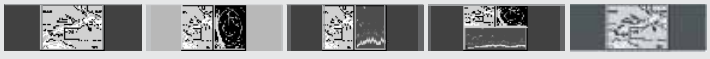
To customise... EDIT PAGE SET

Follow on-screen instructions

Note: Alternatively you can display the Select Page Set screen via the Menu key.

How do I select a Page?

PAGE



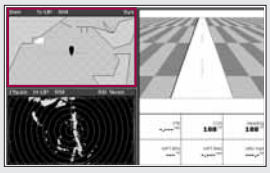
Soft keys reflect current page set. Displayed option highlighted

SOFT KEY

Press appropriate soft key

Note: Alternatively, repeatedly press PAGE until the required page is highlighted.

How do I select a Window?

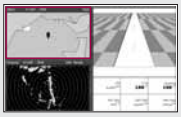


The active window is bordered in red

ACTIVE

Press to move highlight to next window

To temporarily maximise active window:



ACTIVE

Press **and** hold

Press ACTIVE again to return to multiple windows mode.

? More information See the 'General Operation' chapter of the Reference Manual

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General Operation
Using CompactFlash cards

Card 4

CAUTION

CompactFlash Card

In order to protect your E-Series Display and CompactFlash cards from irreparable damage, please adhere to the following:

- **Fit the card the correct way around. DO NOT force.**
- **Ensure card door is firmly closed at all times.**
- **DO NOT use a metallic instrument (e.g. screwdriver or pliers) to aid card removal.**
- **Follow the correct procedure for removing a card (see below).**
- **DO NOT remove card during either a read or write operation.**

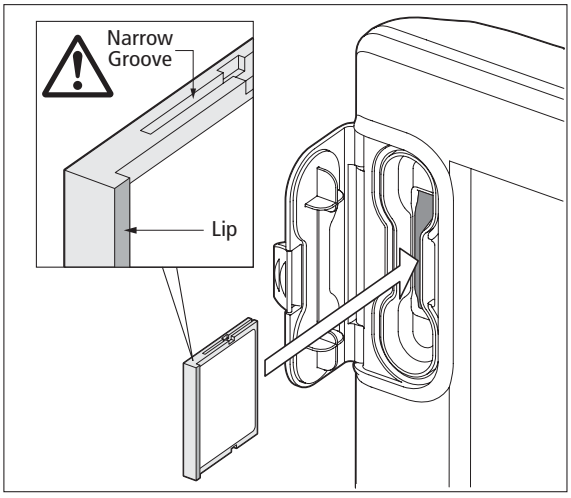
How do I insert a CompactFlash card?

1. Check that you are using the correct type of card. Raymarine recommend Navionics Chart cards or SANDISK CompactFlash cards.

2. Open the chart card door, located on the front left of the display.

3. Insert the card as shown, with the lip of the card facing inwards. It should position easily. If it does not, DO NOT force it, check the direction in which the lip is facing.

4. Gently press the card home and then firmly click the chart card door shut.



How do I remove a CompactFlash card?

... with the unit powered

1. Press **MENU**. The Setup menu is displayed.

2. Use trackpad (up/down) to highlight and then (right) to select CF CARD REMOVAL. The system will now complete its checks.

3. When instructed to do so, open the chart card door and remove the card.

4. Firmly click the chart door shut and press **OK** twice.

... with the unit powered down

1. Open the chart card door.

2. Grip the card and pull to remove it from its slot.

3. Firmly click the chart card door shut.

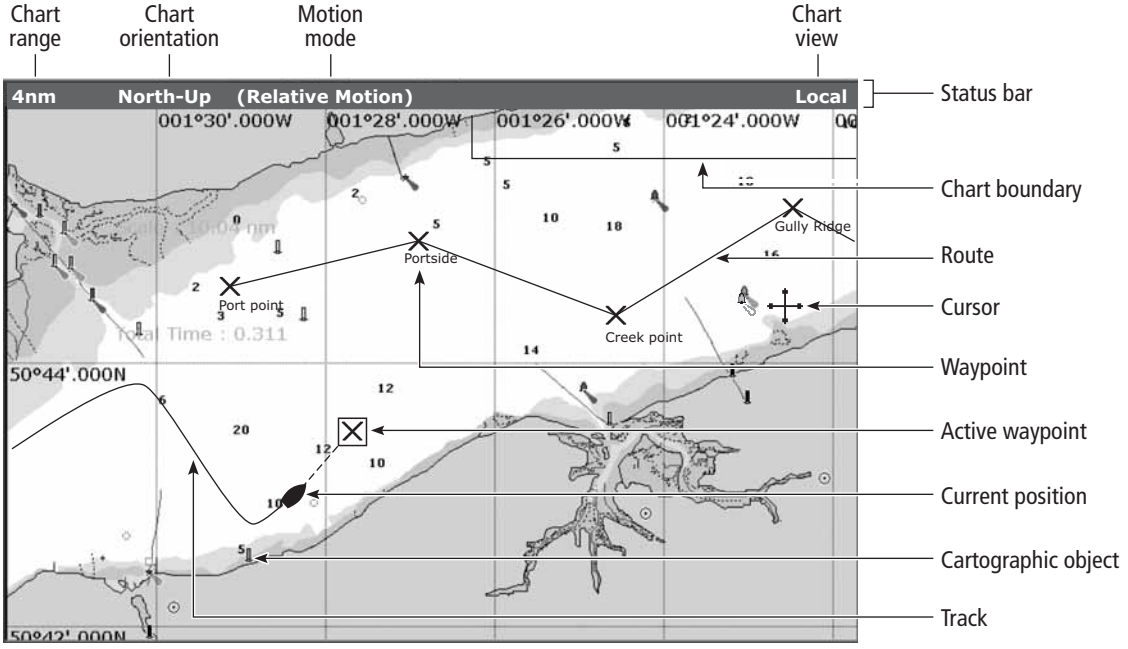
? More information... See the 'General Operation' chapter of the Reference Manual.

What can I see?
Understanding the chart
Card 5

FIND SHIP CURSOR | GOTO | ROUTES | TRACKS | PRESENTATION

What can I use the chart for?

- Find where you are.
- Interpret your surroundings.
- Place waypoints at specific locations.
- Navigate to a specific point.
- Monitor where you are going.
- Record where you have been.
- Measure the distance between two points.
- Build and follow routes.
- Manage and edit routes and tracks.
- Distinguish between fixed & moving objects
- (radar overlay).
- View photographs of ports and marinas.
- View information normally contained in an almanac.
- Display an aerial photo overlay.



How do I move around the chart?

To change the scale:

- Press **RANGE** (OUT) to see a larger area of the chart.
- Press **RANGE** (IN) to see a smaller area in more detail.

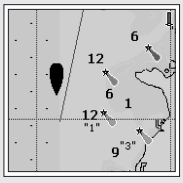
To pan the chart:

- Moves cursor. When cursor reaches window edge, chart pans to a different area.
- Press and hold to pan larger areas.

How do I find where I am on the chart?

The boat symbol indicates your position.

If you cannot find your boat symbol :



The screen automatically pans to your boat's position and re-activiates the motion mode (see below - 'How do I change how my boat moves on the chart').

? More information... See 'Using the Chart' chapter of the E-Series Reference Manual

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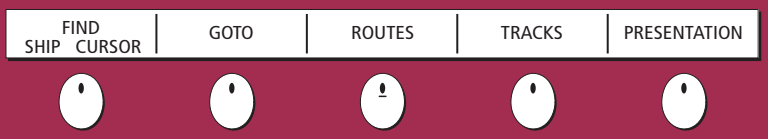
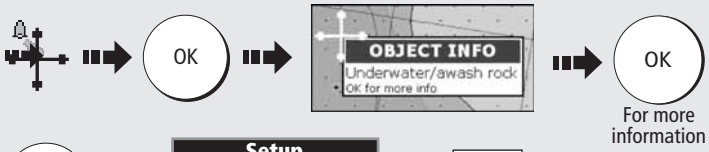
What can I see?
Using the chart ...

Card 6

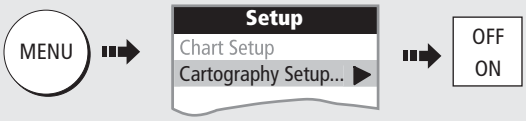


Viewing detail on the chart

- Display additional information on a cartographic feature:



- To show/hide individual cartographic features:



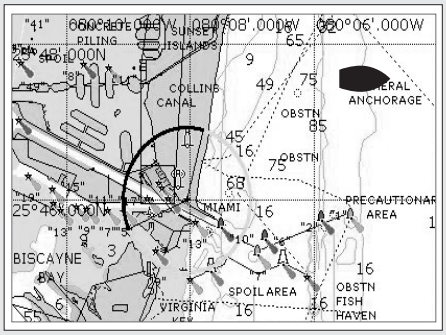
- To show/hide pre-set cartographic features:

How do I change the chart orientation?

The **orientation** of the chart refers to the relationship between the chart and the direction you are travelling in. It is used in conjunction with motion mode (see below) to control how your boat and chart relate to one another and how they are displayed on screen. The default mode is **North Up** (N-UP). This displays your chart with true north upwards. As your heading changes the boat symbol moves accordingly.

If desired, you can change the orientation mode to:

- **Head Up** (H-Up) - displays chart with boat's current heading upwards. As heading changes, boat symbol remains fixed
- **Course Up** (C-Up) - chart picture stabilized, current course upwards. Boat symbol moves as heading changes.

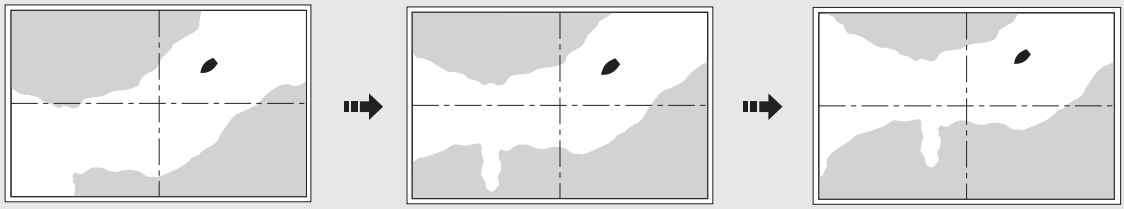


To change the orientation mode:

Toggle as required

How do I change how my boat moves on the chart?

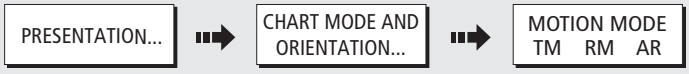
How your boat moves on the screen is referred to as the **motion mode**. The default setting for the chart is **Relative Motion**. This means that your boat is fixed on the screen and the chart moves relative to your boat i.e.



If desired, you can change the motion mode to:

- **True** (TM) - the chart is fixed and the boat moves in true perspective to fixed landmasses on the screen.
- **Autorange** (AR) - selects and maintains the largest possible scale of chart that will display both the boat and the target waypoint This option is not available when radar/chart synchronization is ON.

To change the orientation mode:



NOTE: When you pan the chart or toggle FIND SHIP/CURSOR to CURSOR, the motion mode is suspended.

? More information... See 'Using the Chart' chapter of the Reference Manual

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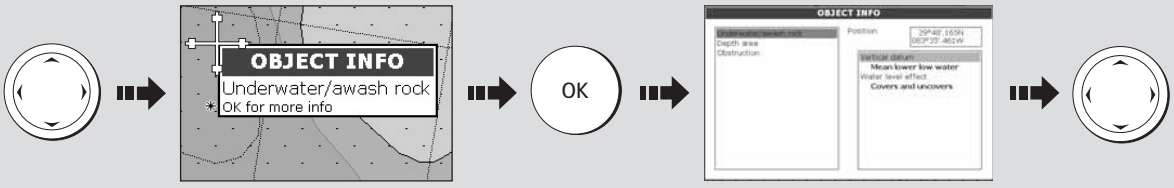
What can I see?
Displaying additional information
Card 7

Viewing object information



Move cursor over object, to display basic information.

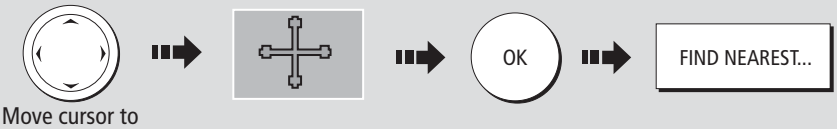
More detailed information for selected object displayed.

You can now:

- Locate the nearest waypoint, port, port service, tidal and current stations, wreck or obstruction, to the selected position.
- Search for a named port.
- View detailed data for the selected port, tidal or current station.
- View panoramic photographs (dependent on the type of chart card in use)

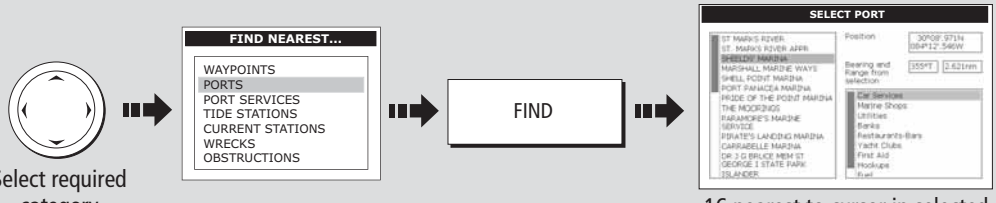
Finding nearby features and services:

1.



Move cursor to required position

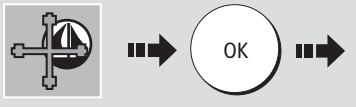
2.



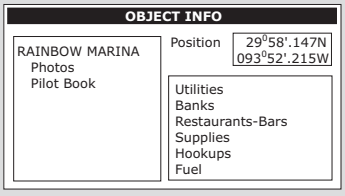
Select required category

16 nearest to cursor in selected category displayed.

Displaying port services:

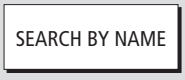


Select appropriate port symbol



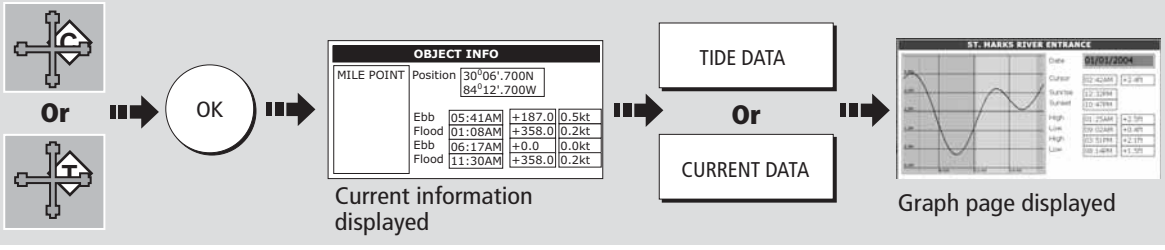
Services for selected port displayed

Or



Note:
Alternatively you can search for port by name

Displaying tidal and current details:



Current information displayed

Graph page displayed

? More information... See the 'Using the Chart' chapter of the Reference Manual.

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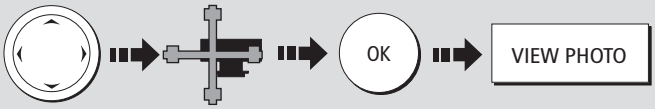
What can I see?
Displaying additional information (continued)

Card 8

How do I display a panoramic photo?

If you are using a suitable chart card, you can display a panoramic photo(s) of many ports and marinas. The availability of photos is indicated by the camera symbol on the chart. This symbol is placed where the photo was taken and the angle of the shot is indicated by the camera symbol.

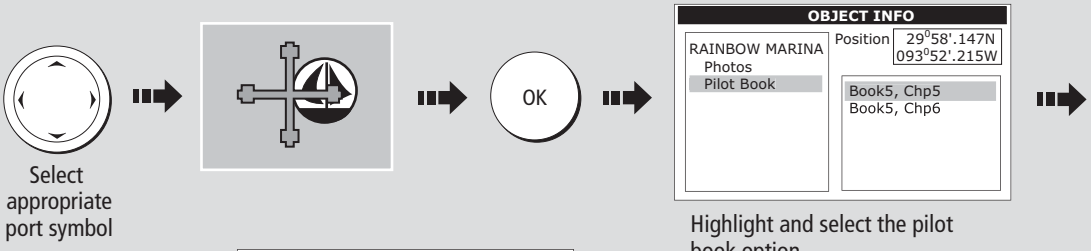


Select required camera symbol

How do I display pilot book information?

This will enable you to view detailed information normally contained in an almanac..

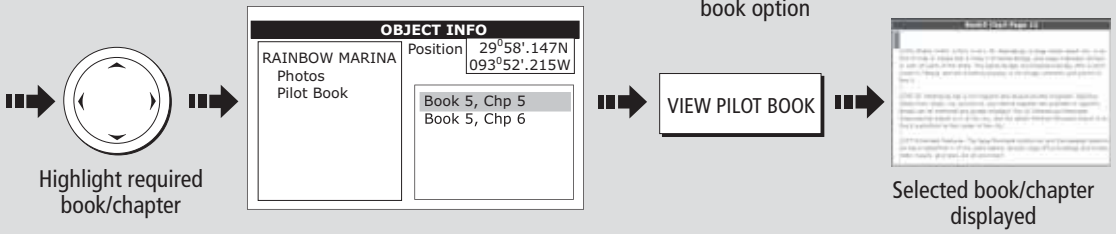
1.



Select appropriate port symbol

Highlight and select the pilot book option

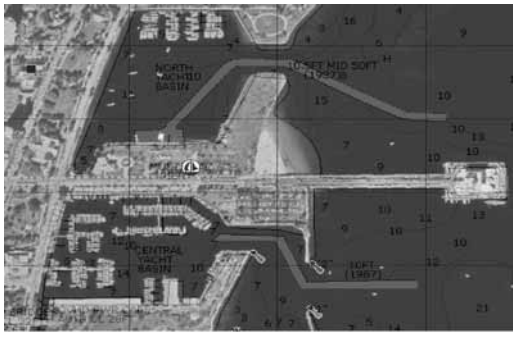
2.



Highlight required book/chapter

Selected book/chapter displayed

How do I display aerial photo overlay?



The aerial photo overlay feature will help you to interpret your environment and its features. If you are using a suitable chart card, this overlay will appear by default on 3D chart windows and can be applied to individual 2D chart windows when required.

Applying aerial photo overlay to a 2D chart:

Enable soft key

3D - Aerial photo overlay can be switched off via the 3D Chart Setup Menu.

2D - Adjust the opaqueness level using the rotary control. Specify land only or land/sea overlay via the cartographic menu.

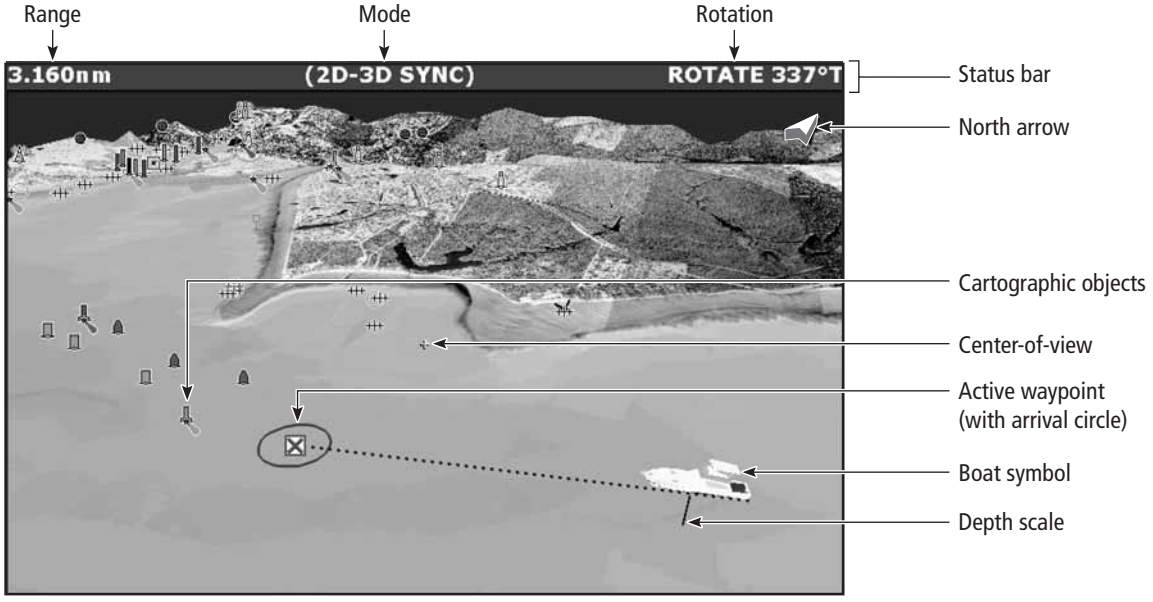
? More information... See the 'Using the Chart' chapter of the Reference Manual.

What can I see?
Understanding the 3D chart
Card 9

What can I use the 3D chart for?

If you are using a suitable chart card you will be able to:

- Display a 3D view of land, sea & features.
- Interpret your surroundings.
- Synchronize the 2D and 3D chart.
- Locate where you are.
- Monitor where you are going.
- Go to an existing waypoint.
- Navigate a route.



How do I move around the 3D chart?

To change the scale:

- Press **RANGE** (OUT) to see a larger area of the chart.
- Press **RANGE** (IN) to see a smaller area in more detail.

To pan the 3d chart:

- To pan a 3D chart to a different area

To adjust rotation/pitch

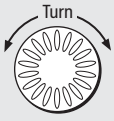
1. Select rotate or pitch:

Or

ADJUST
ROTATE PITCH

Toggle control to required function

2. Adjust the rotation/pitch:



Rotates the view or changes the vertical angle of view.

Changing the view on the 3D chart

To enhance objects and make it easier to see their shape and position:

PRESENTATION… ➡ 3D VIEW OPTIONS... ➡ ADJUST EXAGGERATION ➡ 25 ADJUST EXAGGERATION ➡

Adjust factor as required

To show/hide pre-set cartographic features:

PRESENTATION... ➡ DECLUTTER ON OFF

? More information... See 'Using the 3D Chart' chapter of the E-Series Reference Manual

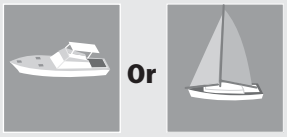
What can I see?
Using the 3D chart ...

Card 10

FIND SHIP | GOTO | ADJUST ON EYE CENTRE | ADJUST ROTATE PITCH | PRESENTATION

How do I find where I am on the 3D chart?

Your position:



Or

If you cannot see your boat symbol:

FIND SHIP ➡

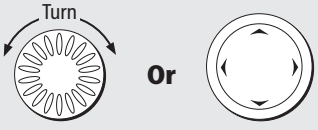
The 3D chart automatically redraws with the boat in forward looking view at your current position.

How do I change the motion mode?

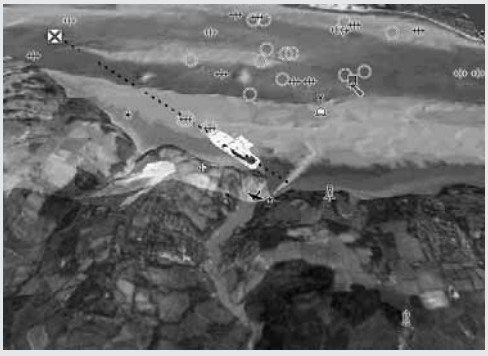
Active motion mode
Default mode when 3D chart opened and there is a valid fix. Shows aerial view from above your boat.

Planning mode:
To view an area of the chart you are not currently in. The boat may not remain on the screen.

To change to planning mode and pan to the area of the 3D chart you want to view:

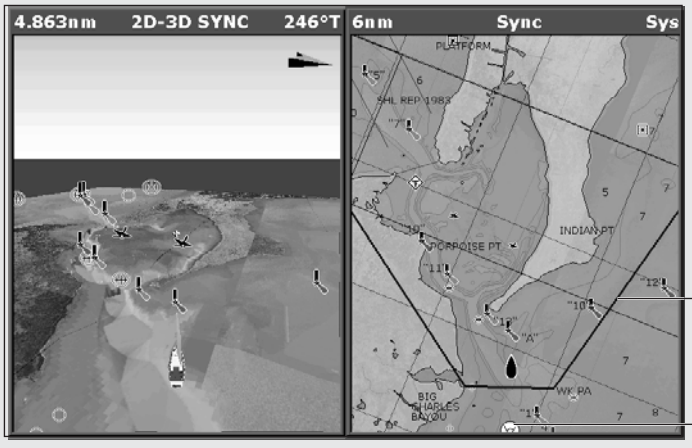


Using aerial photographs



The aerial photograph overlay helps you to interpret features in your environment. This option is accessed via the 3D Chart Setup menu.

Synchronize 3D chart with 2D chart



Note: When multiple windows are displayed and the current window is set to SYSTEM, changes made to the chart are reflected in all windows. If set to LOCAL no other window is affected.

With a 2D chart window active, synchronise 3D to 2D chart:

PRESENTATION... ➡ CHART MODE AND ORIENTATION... ➡ CHART SYNC RDR 3D OFF

? More information... See 'Using the 3D Chart' chapter of the Reference Manual.

D8736_2

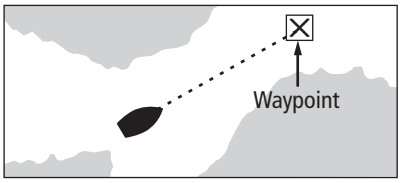
Basic Navigation
Working with Waypoints

Card 11

WAYPOINT AT CURSOR | WAYPOINT AT VESSEL | WAYPOINT AT LAT/LON | GO TO WAYPOINT OPTIONS | REVIEW AND EDIT WAYPOINTS

What is a waypoint?

A waypoint is a position marked on a chart, radar or fishfinder screen to indicate a site (for fishing, diving etc), or as a position to go to. You can place a waypoint at the cursor or your boat's position or at a specified position. Waypoints are represented in chart or radar applications as an 'X' (default) and by a vertical line labeled WPT in Fishfinder. Active waypoints are displayed on 3D Chart and CDI windows. The details of each waypoint are stored in a waypoint list. Waypoints can be renamed, edited, grouped, or erased, as necessary. To make full use of waypoint features, ensure your display is receiving heading and position data. We recommend that you regularly back-up your waypoints by archiving them to a CompactFlash card. Waypoints can also be transferred to another NMEA compatible instrument.



Networked systems

If you have networked two or more E-Series Displays, the waypoints are stored on the master display and transferred to other displays via the SeaTalk High Speed network.

How do I place a waypoint?

... at the cursor?

Move cursor to position → WPTS/MOB → WAYPOINT AT CURSOR → WPT

... at the vessel?

WPTS/MOB → WAYPOINT AT VESSEL

Alternatively, press WPTS/MOB twice.

How do I navigate to a point?

Move cursor to position → GOTO... → GOTO CURSOR

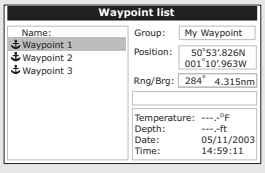
CAUTION

Always check that your route to a waypoint is safe before travelling towards it.

How do I navigate to a waypoint?

...using the waypoint list?

WPTS/MOB → GO TO WAYPOINT OPTIONS... → Waypoint list → Highlight required waypoint → GO TO WAYPOINT



...using the cursor?

Place cursor over waypoint. → GO TO WAYPOINT

To stop navigation to a waypoint:

GOTO... **OR:** Move cursor to required position → STOP GOTO

Can I edit a waypoint?

Once a waypoint has been placed it can be edited in as variety of ways. You can:

- Change the waypoint details
- Move a waypoint
- Change the default group or symbol
- Erase a waypoint

More information... See the 'Working with Waypoints' chapter of the Reference Manual

D6729_4

Basic Navigation
How do I get to a point?

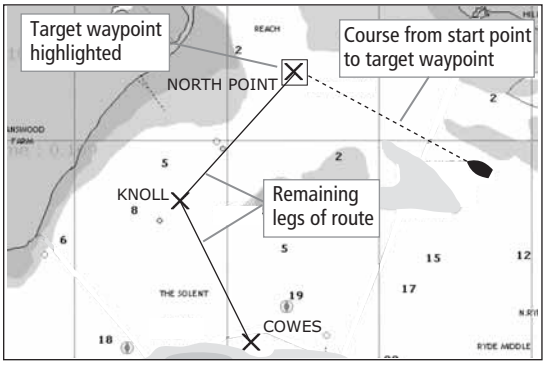
Card 12

SHOW/HIDE ROUTES | FOLLOW ROUTE OPTIONS | BUILD NEW ROUTE | | REVIEW AND EDIT ROUTES

What is a route?

A route is made up of a series of waypoints. These waypoints can either be placed specifically for that route and/or you can use existing waypoints. You can save a route for future use or follow it immediately (Quick Route). Routes are stored in a route list. If you have networked two or more E-Series displays, the routes are stored in the master display and are transferred to the other displays via the SeaTalk High Speed network.

Routes can be named, edited, erased and archived. After routes have been created you can choose which ones are displayed on your chart.

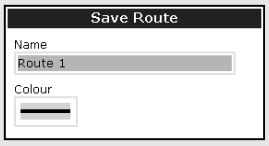


How do I build a route by placing waypoints on screen?

1. Move cursor into appropriate area → OUT / RANGE / IN: Select a suitable scale → ROUTE... → BUILD NEW ROUTE → Move cursor to required position for first waypoint

2. PLACE WAYPOINT → Move cursor to position for next waypoint. → PLACE WAYPOINT → SAVE ROUTE

3.



→ OK

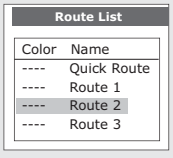
UNDO WAYPOINT

If you place a waypoint at the incorrect position, press UNDO WAYPOINT.

How do I follow a route?

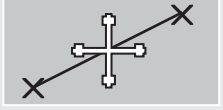
... from the route list

GOTO... → FOLLOW ROUTE OPTIONS... →



→ Select route → FOLLOW ROUTE

... from the start of route



Position cursor over any leg of required route → FOLLOW THIS ROUTE

... from a selected waypoint within route

Position cursor over appropriate waypoint → FOLLOW FROM HERE

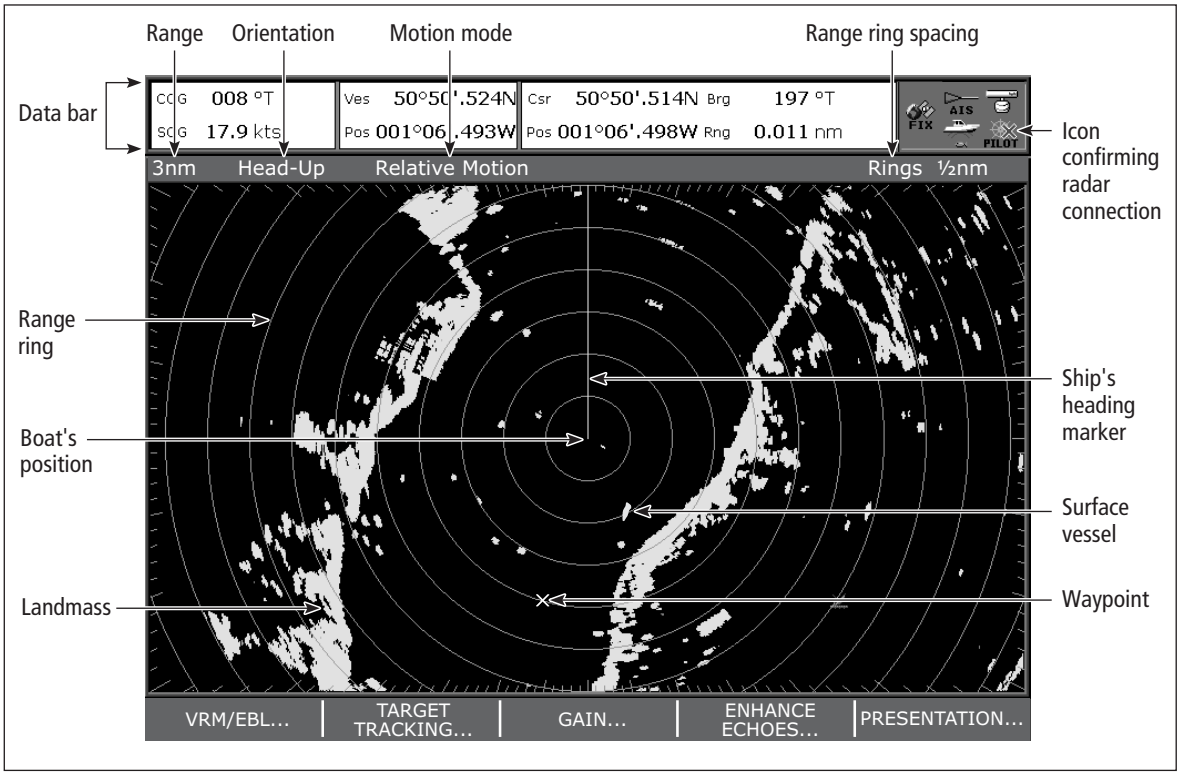
? More information... See the 'Using the Chart' chapter in the Reference Manual, for more information on routes.

What is around me?
Understanding the radar

Card 13

VRM/EBL | TARGET TRACKING | GAIN | ENHANCE ECHOES... | PRESENTATION

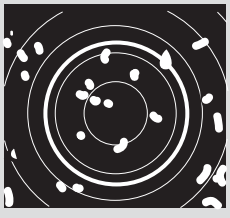
What does the radar show me?....



Typically your boat's position is at the centre of the display, and its dead ahead bearing is indicated by a vertical heading line, known as the Ship's Heading Marker (SHM).

Remember that the radar picture may vary from visual observations that you make; a nearby small object may appear the same size on the screen as a distant large object. However, with experience the approximate size of different objects can be determined by the relative size and brightness of the echoes.

How do I measure distances, ranges and bearings with the radar?



VRMs

Align a VRM on a target to display its range from your boat:

e.g. ADJUST VRM 1.800nm

EBLs

Align an EBL on a target to display its bearing relative to your boat's heading:

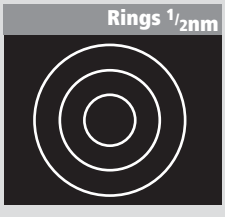
e.g. ADJUST EBL 30.0°S

Combined VRM/EBL

Combine a VRM and EBL to measure range and bearing of specified target.

e.g.

ADJUST VRM 1.800nm	ADJUST EBL 30.0°S



Range rings

Use the range rings to gauge the approximate distances between two points or from your boat.

Note: Range/bearing also displayed when VRM/EBL selected with the cursor.

? More information... See the 'Using the Radar' chapter of the Reference Manual

What is around me?
Avoiding a collision

Card 14

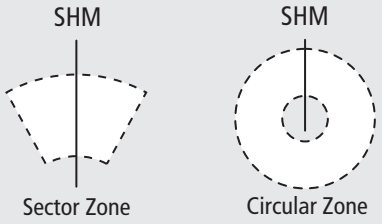
How can the radar help me avoid a collision?

You can set up your E-Series Display to sound an alarm when anything comes within a pre-set range of the boat. These guard zones allow you to take any necessary action to avoid a collision.

Guard zones

A sector or circular zone fixed with respect to the Ships Heading Marker (SHM). If the SHM moves, or the centre is offset, or the range scale changes, the zone moves accordingly.

What does a guard zone display?



IMPORTANT

A guard zone:

- Will only operate when a whole zone is displayed on screen, or displayed by offsetting the centre.
- Is inactive for 10 seconds after it is placed or re-sized, to avoid inappropriate alarms.

How do I set up a circular guard zone?

1. Select guard zone function:

TARGET TRACKING... ➡ MONITOR IN ZONES... ➡ ZONE 1 ON OFF ➡ SET UP ZONE 1 ➡

Toggle to ON

2. Select guard zone option:

ZONE SHAPE SECTOR CIRCLE ➡ SET INNER xx.xx nm ➡ Turn ➡ ➡ Turn ➡ OK

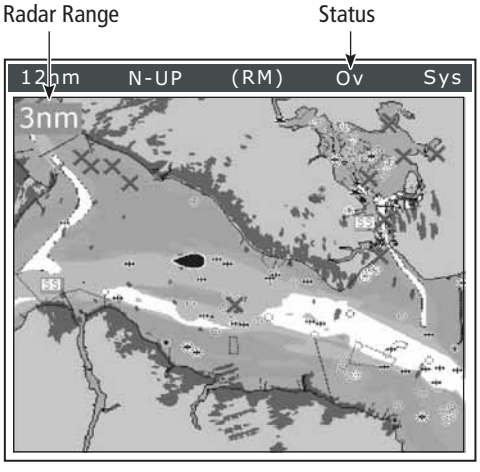
Toggle to required shape

Turn to set inner boundary

Press

Turn to set outer boundary

How do I distinguish between fixed and moving objects?



To switch radar overlay on/off:

You can overlay radar image data on your chart allowing better distinction between fixed objects and other marine traffic.

With a 2D chart window active:

PRESENTATION... ➡ CHART LAYERS ➡ RADAR OVERLAY ON OFF

To switch chart/radar synchronization on/off

For best results, also switch on chart/radar sychronization.

With a 2D chart window active:

PRESENTATION... ➡ CHART MODE AND ORIENTATION... ➡ CHART SYNC RDR 3D OFF

To change scanner range in this mode: RADAR OPTIONS... ➡ OUT RANGE IN

? More information... See the 'Using the Radar' chapter of the Reference Manual.

D8838_2

What is around me?
Using MARPA....

Card 15

MONITOR IN ZONES | ACQUIRE TARGET | MARPA & AIS OPTIONS | MARPA LIST | AIS LIST

What is MARPA?

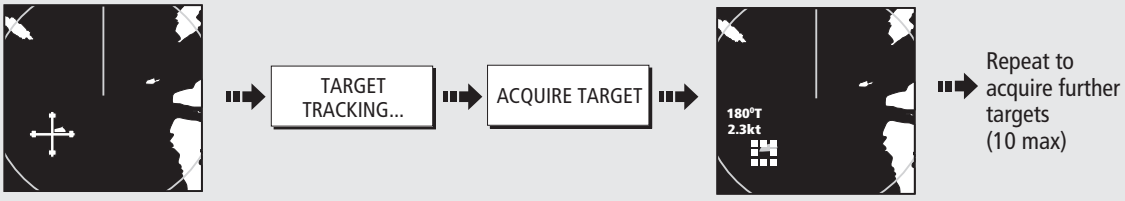
Mini Automatic Radar Plotting Aid (MARPA) functions are used for target tracking and risk analysis. MARPA improves your standards of collision avoidance by obtaining detailed information for up to 10 targets, and provides continuous and rapid situation evaluation.

MARPA tracks the selected targets and calculates target bearing, range, true speed, course, Closest Point of Approach (CPA), and Time to Closest Point of Approach (TCPA). Each tracked target can be displayed with a CPA graphic depicting the approximate target speed (vector length) and course (vector direction). Alternatively, move the cursor over the target to display the range and CPA. You can now access bearing and speed. Each target is continually assessed. An alarm sounds if a target becomes dangerous or lost.

NOTE: For MARPA to operate, fast heading data is required.

How do I set up the MARPA functions?

How do I acquire a MARPA target?


TARGET TRACKING...
ACQUIRE TARGET
180°T
2.3kt
Repeat to acquire further targets (10 max)
Move cursor over target to acquire
The target is acquired - this takes a few seconds

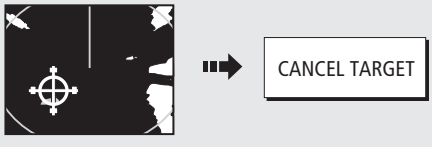
MARPA target symbols Target being acquired | Safe target | Dangerous target

How do I view details of MARPA targets?

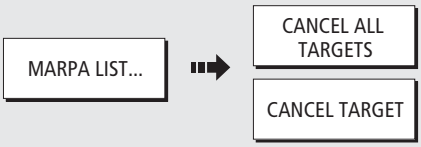
TARGET TRACKING...
MARPA LIST...
MARPA LIST
ID Bearing Range True Course True Speed CPA TCPA
2 312°T 1.739nm 342°T 9.9kt 1.739nm 00h00m00s
3 274°T 3.242nm 335°T 68.4kt 3.242nm 00h00m00s
4 086°T 1.305nm 276°T 9.4kt 1.305nm 00h00m00s
5 247°T 1.774nm 321°T 22.7kt 1.774nm 00h00m00s

Tracked targets with data listed.

How do I cancel MARPA target(s)?



Or:



More information... See the 'Using the radar' chapter of the Reference Manual.

D6733_4

What is around me?
Using AIS

Card 16

What is AIS?

AIS uses digital radio signals to broadcast 'realtime' information between vessels and shore based stations via dedicated VHF frequencies. This information is used to identify and track vessels in the surrounding area and to provide collision avoidance data. AIS will augment your radar application, as it can operate in radar blind spots.

In order to use the AIS feature, you will need a GPS and compass for timing and position information together with data from a suitable AIS receiver.

How do I display AIS?

On chart windows:

PRESENTATION... ➡ CHART LAYERS... ➡ AIS LAYER ON OFF

Toggle as required

On radar windows:

PRESENTATION... ➡ AIS LAYER ON OFF

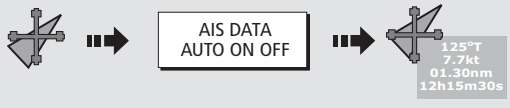
Toggle as required

How is AIS data displayed?

The AIS system displays other AIS equipped vessels in the surrounding area as targets overlaid on a chart or radar window. Up to 100 targets are displayed and are scaled according to the size of the vessel. A vector indicates the direction of travel of the vessel. As the vessel's status changes, the symbol for the target will change accordingly.

You can view detailed AIS data, safety critical target information, Alarm message (ALR) and Safety Related Message (SRM) messages. You can also set up a safe zone.

How do I view target information?

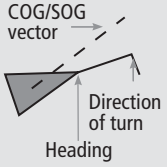


How do I view detailed AIS data?

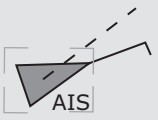
AIS target symbols

Sleeping target
- Target not activated, dangerous or lost.

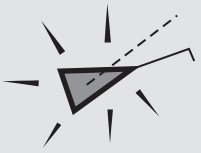
Activated target
- Target activated i.e. AIS vector displayed.
- Vector line (optional) shows predicted distance travelled within given time.



Selected target
- Target selected with cursor.
- Can activate the target and view detailed data.



Dangerous target
- Targets within specified distance (CPA) or time (TCPA).
- Dangerous target alarm sounds and target flashes.



Uncertain target
- Calculated CPA/TCPA value uncertain.

Lost target
- When signal of a dangerous AIS target not received for 10 seconds.
- Target orientated in COG or CSE direction as appropriate.
- Alarm sounds and target flashes

WARNING:

Smaller vessels do not have to be fitted with AIS and whilst it is mandatory for larger commercial vessels to carry AIS, its use is not. You should not assume that your AIS will display ALL vessels in your area.

? More information... See the 'AIS' chapter of the reference manual for data classes and how to customise this feature.

Where am I?
Monitoring a course....

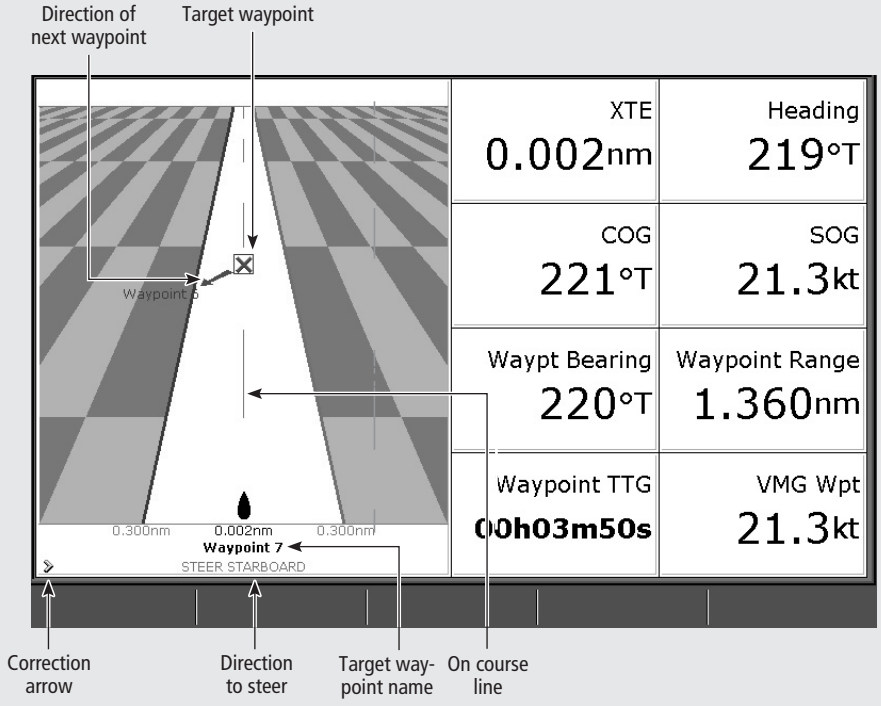
Card 17

How do I monitor my course?....

- Your course is shown on the chart application whilst motion mode is active.
- Using COG and heading vectors (Press DATA - CHART VECTORS - COG/HDG VECTORS).
- Use the Course Deviation Indicator (CDI). With your display receiving accurate heading and position information, you can monitor your course and accurately steer to a target waypoint.

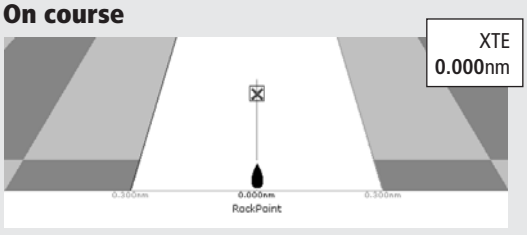
What does the CDI show me?....

The CDI gives a graphical representation of your boat's course. This 'rolling road' format represents a width of sea equal to the Cross Track Error (XTE) limits that you have specified in the Setup menu. As you travel towards the target waypoint, the checkered pattern moves down the screen to simulate movement at a rate proportional to your boat's speed.



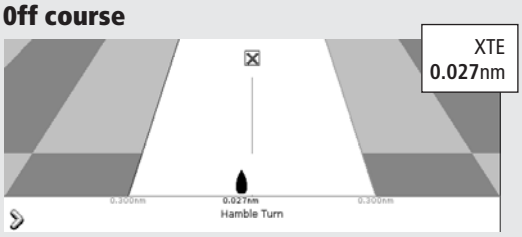
What do the steering instructions tell me?

On course



- Boat on center line.
- Zero XTE

Off course



- Boat off center line.
- Correction arrow(s) indicate direction to steer to maintain course to target waypoint.
- The greater the XTE, the more arrows.

? More information... See the 'Using the CDI' chapter of the Reference Manual

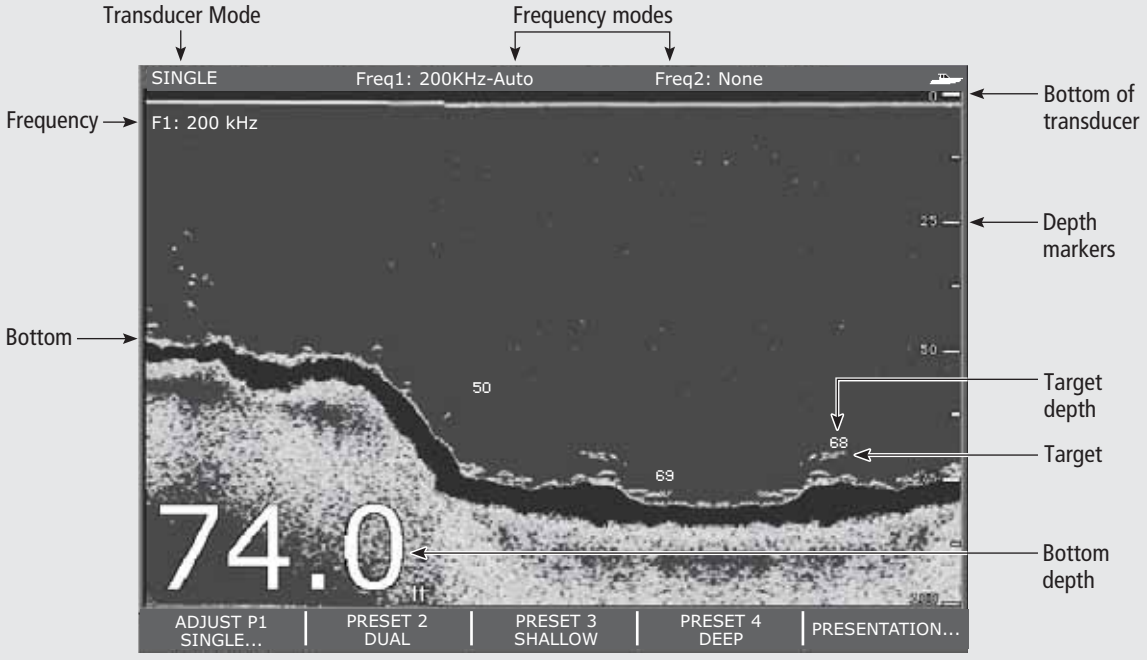
What's under the boat?
Understanding the fishfinder

Card 18

What's under the boat?

The fishfinder application, when connected to a suitable Digital Sounder Module (DSM) and transducer, will help you to see fish, bottom structure and underwater obstructions. The image scrolls from right to left at an automatically selected range and frequency to provide a record of the echoes seen. You can mark with a waypoint any positions of interest that you may wish to return to. These waypoints are added to the waypoint list and can be used by other applications.

What can I see on the screen?



How do I interpret the bottom?

A thin line indicates a hard bottom (sand)

A wide line indicates a soft bottom (mud or seaweed cover)

Peaks and troughs, indicate an uneven or rocky bottom or a wreck

Dark layers indicate strong signals; lighter layers weaker signals.

What influences target display?

The shape and size of echoes indicating targets, is influenced by a combination of:

- Boat speed - flatter at slower speeds
- Target depth - larger near the surface
- Transducer frequency - broader at lower frequencies
- Target size - larger targets return larger echoes

? More information... See the 'Using the Fishfinder' chapter of the Reference Manual.

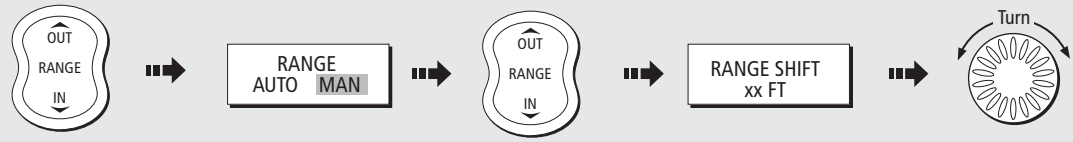
D6735_5

What's under the boat?
Using the fishfinder....

Card 19

How do I change the range or shift the image?

Your system automatically adjusts the display depth range, selecting the shallowest depth that keeps the bottom on the lower half of the window. You can however, set this manually if required and move the image within the selected page up or down. Using the range controls will affect all fishfinder windows.



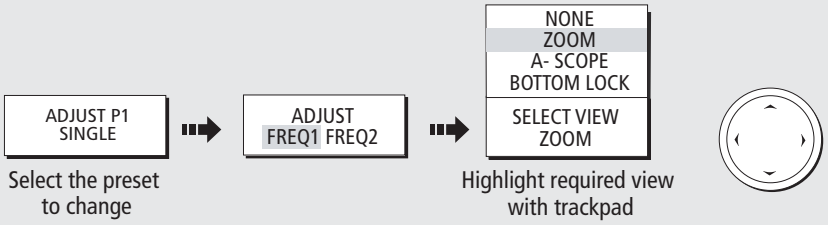
Press RANGE (IN or OUT)

IN - decrease depth.
OUT - increase depth.

Turn to alter value.

How do I change Presets?

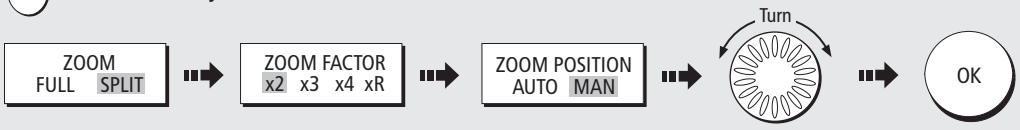
The Fishfinder application window allows you to have up to 4 user configurable preset modes, this allows you to select and configure the transducer frequency and screen view's (see E-Series reference manual section 6.6 Display mode settings, and section 6.10 Editing presets).



Select the preset to change

Highlight required view with trackpad

Use the softkeys to select the different modes (unless instructed otherwise)



Select required zoom mode

Select required zoom range

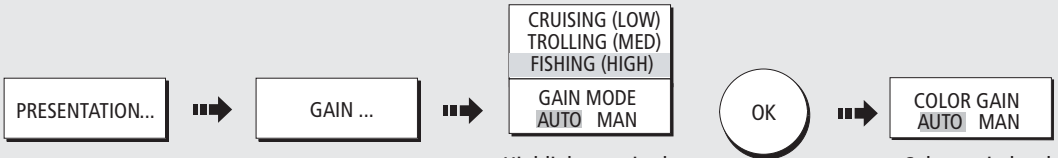
Select required zoom position

Turn to alter value

How do I change the gain mode?

The system automatically adjusts the gain control to display the sharpest image. If required, you can select the gain level to suit your fishing mode:

- **Low** - when cruising
- **Med** - when trolling
- **High** - when fishing



Highlight required preset

Select gain level

To define the gain mode still further, and to define other settings available on this page, select manual gain mode and then adjust the level using the rotary control.

More information... See the 'Using the Fishfinder' chapter of the Reference Manual.

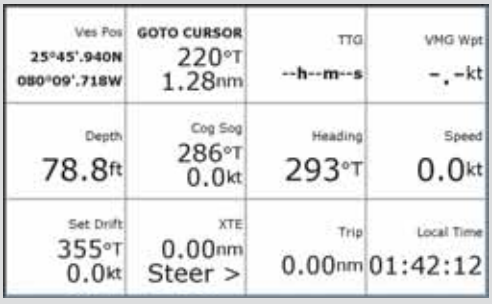
D6736_4

● Monitoring data and engines
● Viewing video images

Card 20

How do I monitor data?....

NAVIGATION	WAYPOINT	ROUTE	FISHING	SAILING

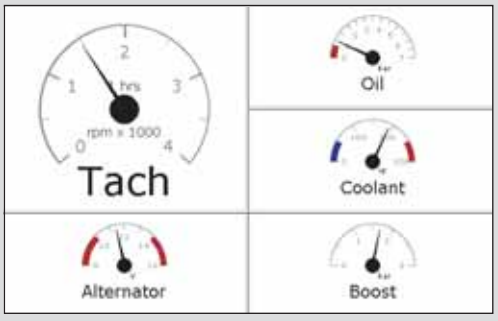


The **data application** enables you to view numeric data generated by the system or by instruments available on NMEA 0183, SeaTalk, SeaTalk^2, NMEA 2000 and SeaTalk^{hs}. This information is displayed in a series of panels which contain data relating to a particular function or activity. These can be reconfigured to your needs.

Press the appropriate soft key to select the panel of your choice.

How do I monitor the engine(s)?....

ENGINE	ENGINE & FUEL	FUEL RESOURCES	ENGINE & RESOURCES	TWIN ENGINE



The **engine monitor application** enables you to view data from up to three compatible engines. The information is displayed in a series of panels which contain data relating to engine, fuel and fuel resources. These can be reconfigured to your needs.

Press the appropriate soft key to select the panel of your choice.

To view data from 3 engines, change the 'No. of engine' setting in the Panel Setup Menu

How do I view video images?....

VIDEO 1	VIDEO 2	VIDEO 3	VIDEO 4	PRESENTATION

The **video application** enables you to view images from a satellite TV, video or DVD player or on-board camera.

Press the appropriate soft key, to select the video input of your choice or set CYCLE VIDEO to ON (via the PRESENTATION key), to cycle through the video inputs.

Note: Video images can only be viewed on the display to which the video source is connected. They cannot be networked to other Displays.

? More information... See the appropriate chapter of the Reference Manual.

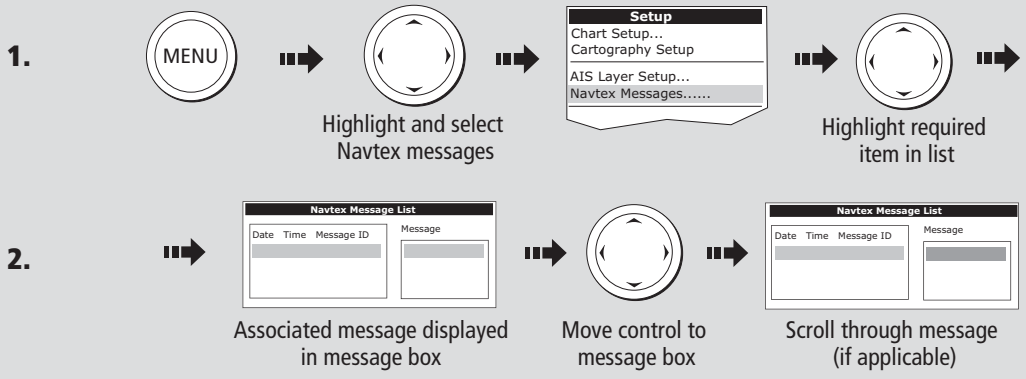
Navtex and Sirius Weather Data

Card 21

Navtex

If connected to a Navtex receiver, you can use your display to view navigation, meteorological and search and rescue alerts. You can choose which category of alerts will automatically be displayed when one is received by your display. After you have read the message you can either erase it or save it to the database (100 maximum). You can view the list of saved messages at any time. Messages are viewed and alerts set-up via the Setup Menu option Navtex Messages.

Viewing saved messages



The Sirius Weather application (USA only)

To run the Sirius Weather application you will need to purchase an SR100 weather receiver and a subscription to Sirius weather.

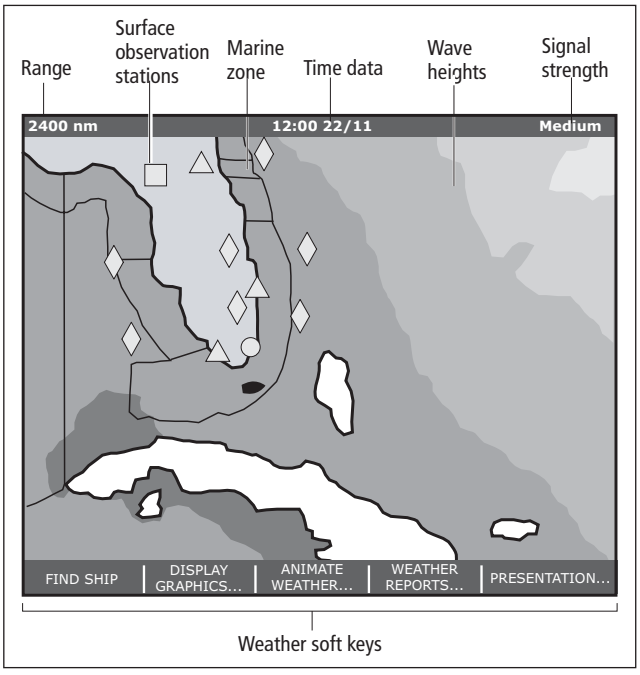
Once connected, the weather application superimposes historical, current and forecasted weather graphics and environmental conditions on the world map and provides textual forecasts and warnings. These help you to determine the actual conditions in your vicinity or at a particular location.

As in the chart application, use the cursor to move around the map and view different locations, and the range button to zoom in and out.

To re-center the map on your boat use the FIND SHIP soft key.

Note: As with all weather services, the information presented is advisory only and you should be aware that errors may occur.

Note: If you have an SR100 connected, you can also control your Sirius satellite audio via your E-Series display.

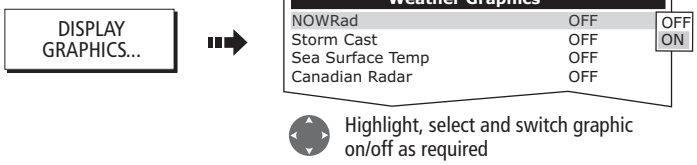


? More information... See the appropriate chapter for the Reference Manual.

Sirius Weather Data (continued)

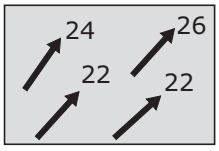
Card 22

By default, all weather graphics are set to OFF.
To display the required weather graphic:



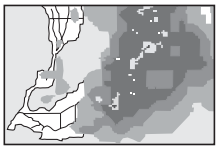
Highlight, select and switch graphic on/off as required

Weather symbols (USA only)

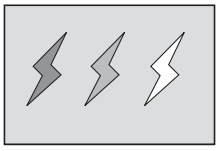


Storm cast

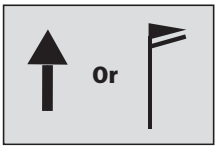
Waves (blues-green-red)



Canadian radar (light green- dark red)

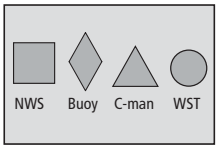


Lightning (light-med-dark yellow)

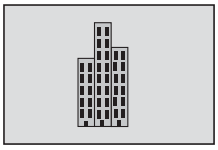


Wind (see below for details)

Sea surface temperature (blue-green-yellow -orange-red)

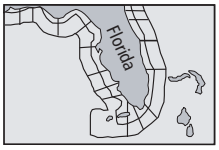


Surface observation station (pink)



Cities (grey)

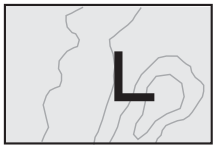
Rain (green-yellow-red)
Snow (blues)
Mixture (pinks)



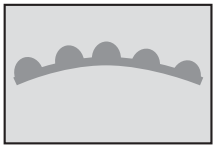
Marine zones

Surface pressure

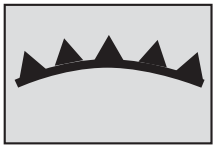
High pressure (blue)



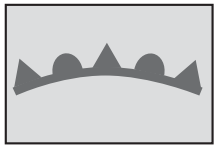
High pressure (red)



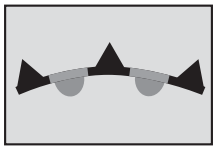
Warm front (red)



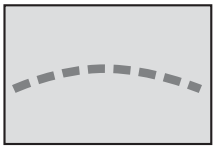
Cold front (blue)



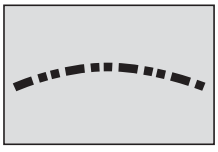
Occluded front (purple)



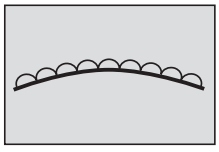
Stationary front (red-blue)



Trough (brown)



Squall line (red)



Dry line (brown)

Isobars (grey)

Storm Tracks symbols

Shown in three different colours:
● Grey - historical ● Red - current ● Orange - forecast

Note: Highlight the symbol for additional information

Hurricane (Category 1-5)

Tropical storm

Tropical disturbance or tropical depression

Wind speed symbols (knots)

? More information... See the Weather (USA only) chapter of the Reference Manual.

Autopilot Operation
Using the Autopilot controls
Card 23

How do I access Auto and Standby from my E-Series?

Enabling the Autopilot from set up:

- Enabling and engaging the autopilot
  To allow the E-Series to control autopilot functions, you need to enable autopilot control on the display unit. With autopilot control enabled, the unit lets you engage the autopilot whenever it has a target waypoint. You can see information for the target waypoint on the Pilot Control pop-up. The default autopilot setting is disabled.

To enable autopilot control on the E-Series display:

- Press the MENU button to open the Setup Menu.
- Select System Setup > System Integration > Autopilot Control > Enabled.
- Press the OK button.

What are the Autopilot symbols?

Wind Vane mode

Power Steer mode

Pilot Alarm mode

No Pilot connected

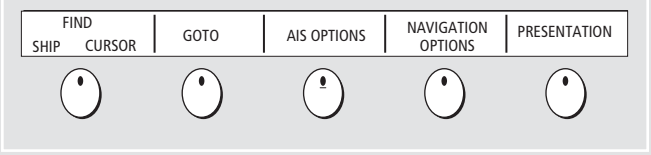
Auto mode

Track mode

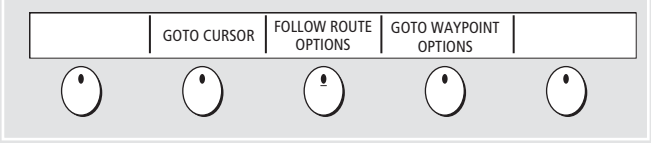
Standby mode

How do I engage and disengage the Autopilot in normal operation?

- When the autopilot is enabled, the E-Series prompts you to engage the autopilot whenever you initiate a GOTO or FOLLOW ROUTE.



- Select GOTO or FOLLOW ROUTE to display the Engage Pilot screen.



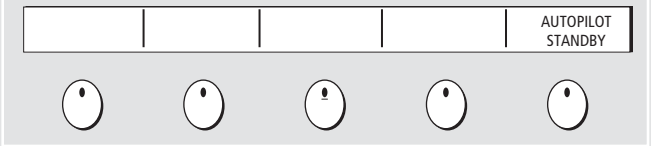
- Select ENGAGE PILOT to display the Pilot Control screen.

  NOTE:
  If you press OK, CANCEL or the page times out without engaging the autopilot, you go back to the navigation screen with the autopilot disengaged.

How do I disengage the Autopilot in an emergency?

You can choose to disengage the pilot quickly if required by pressing the Power key

Select 'AUTOPILOT STANDBY' to put the pilot in the autopilot into standby mode and take control of the helm manually



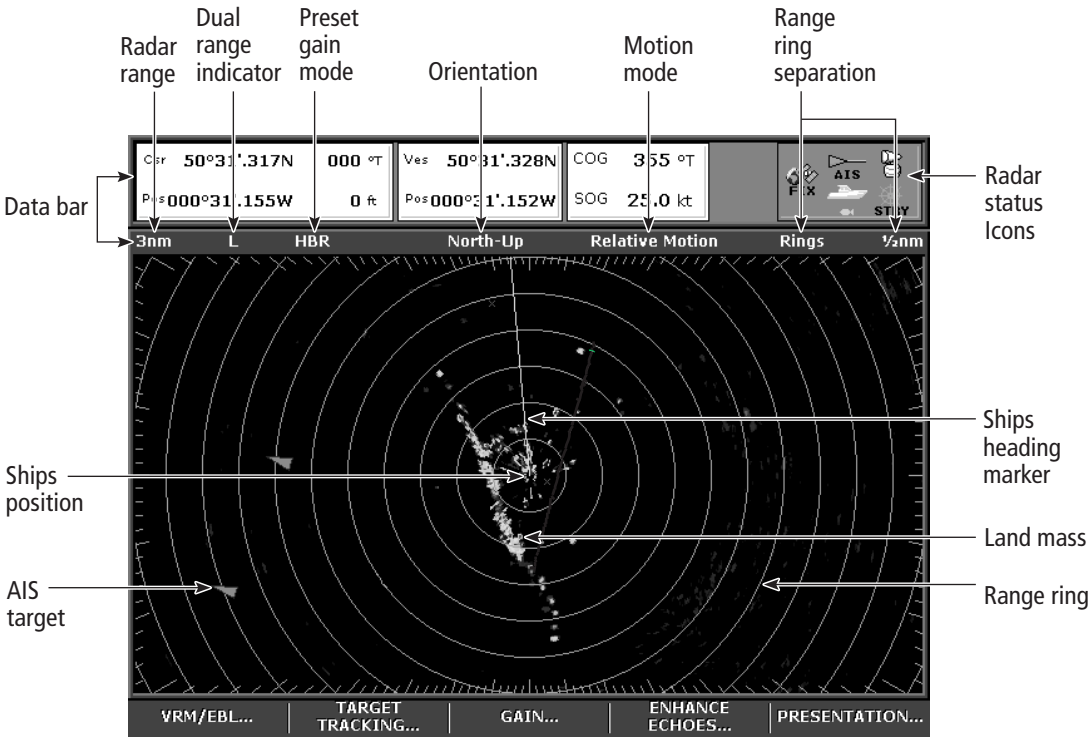
? More information... See Autopilot control chapter of the Reference Manual.

What is around me?
Understanding the digital radar

Card 24

VRM/EBL | TARGET TRACKING | GAIN | ENHANCE ECHOES... | PRESENTATION

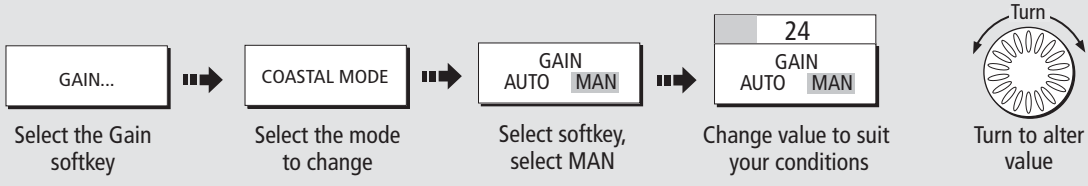
What do the digital radar colors show me?....



The colors displayed represent the strength of the echoes received from targets. For most targets the echo strength is closely related to their size. Colors also help to distinguish targets within Clutter. Normally, targets will be displayed as a stronger color than the surrounding clutter. For example, a Buoy with a radar reflector will show clearly in sea clutter.

How do I change the radar gain settings?....

The Radar application window allows you to select 4 user configurable preset modes, Buoy, Harbour, Coastal & Offshore. They allow you to configure the Gain, Color Gain, Rain & Sea Clutter settings to aid you in customising the display to suit the conditions (see E-Series Reference manual, 'Tuning the radar display'). For each gain preset, Auto mode is recommended, but you can change settings manually for each preset to suit individual situations.



Select the Gain softkey

Select the mode to change

Select softkey, select MAN

Change value to suit your conditions

Turn to alter value

Select the ok to save manual setting softkey

? More information... See the 'Using the Radar (Digital)' chapter of the Reference Manual

D10703_1

Operating a networked E-Series Display

Card 25

What does a networked system do?

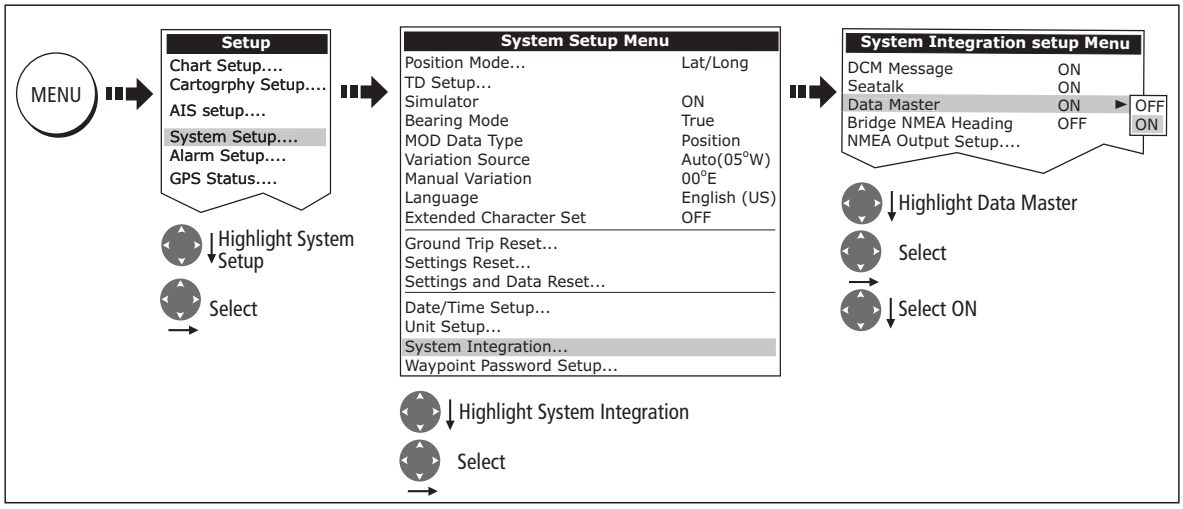
If you have connected two or more E-Series Displays (via either a crossover coupler or SeaTalk High Speed Switch), all system data (from NMEA 0183, SeaTalk, SeaTalk^2, NMEA 2000, SeaTalk^{hs} waypoints, routes etc) can be transferred across the network enabling you to input, view and maintain data across all your displays irrespective of the Display from which the data originated (excepting Video Input).

How is the network controlled?

The display that has been installed and nominated as the master, should always be switched on (preferably first). The master display maintains the waypoint, route and track lists as well as data from NMEA and SeaTalk. Each time the master display detects a change on any display e.g. waypoint, route or track added or edited, the data is copied to the database which in turn is copied to all other Displays that are switched on.

If the system does not detect a master, either because it is not switched on or because a master has not been selected, an alarm will sound and you will be prompted to set a master display.

How do I change the master display?



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